Order No. ITD0910153BE

Service Hints

TH-P65V10S

Plasma Television

<PDP 2009 Model>

TH-P65/50V10S , TH-P65/50V11S
TH-P42G10K , TH-P42G11S
TH-P50/42S10K , TH-P50/42S10S
TH-P50/42X10K , TH-P50/42X10S
TH-P50/42C10K , TH-P50/42C10S

- Ver 2.0-

Troubleshooting Guide

This service hints is published for technicians and engineers for repair.
And it gives you the information how to judge the defective board of PDP.
In the future,we will improve the contents for more easy diagnostic and trouble shooting.

Please file and use this Service Hints together with the main service manual and other publications related to models.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

© Panasonic Corporation 2009.
Unauthorized copying and distribution is a violation of law.

Contents

1. 2009 PDP Line up & Feature Comparison ---------- P3

2. PCB Location & Function ---------- P5

3. PCB List ---------- P11

4. Block Diagram ---------- P13

5. Troubleshooting ---------- P19

6. Service Information ---------- P26

1. 2009 PDP Line up & Feature Comparison

1. 2009 PDP Line up & Feature Comparison

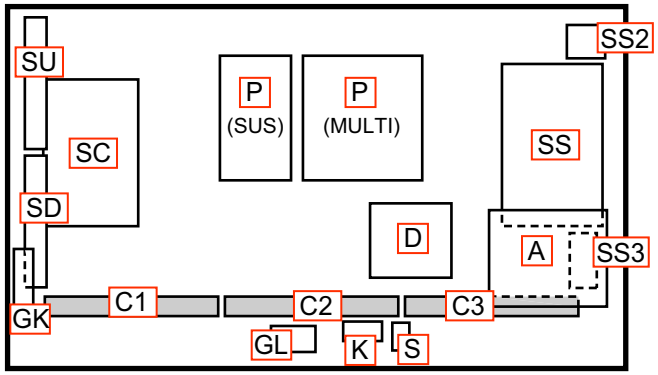
		V10/V11 Series	G10/G11 Series	S10 Series	X10 Series	C10 Series
Picuture	Size	65/50	42	50/42	50/42	50/42
	Panel	Full-HD NeoPDP	Full-HD NeoPDP	Full-HD PDP	HD PDP	HD PDP
	AR Filter	Y	Y	Y	—	—
	Contrast Ratio	40,000:1	40,000:1	30,000:1	30,000:1	30,000:1
	Moving Picture Resolution	1080 lines	1080 lines	1080 lines	720 lines	720 lines
	600 Hz Sub-Field Drive	Y	Y	N (550Hz)	Y	Y
	24p Smooth Film	Y	—	—	—	—
	Digital Cinema Colour	Y	—	—	—	—
	Shades of Gradation	6144	6144	5120	5120	5120
	Deep Colour (10/12-bit)	Y	—	—	—	—
	x.v. Colour	Y	Y	Y	Y	Y
	THX Mode	Y	—	—	—	—
	3D Colour Management	Y	Y	Y	Y	Y
	Sub Pixel Control	Y	Y	Y	Y	Y
	C.A.T.S.	Y	Y	Y	Y	—
Sound	Speakers	Full-Range	Full-Range	Full-Range	Full-Range	Full-Range
Networking	VIERA Image Viewer	Y (AVCHD/MPEG2 /JPEG playback)	Y (AVCHD/MPEG2 /JPEG playback)	Y (AVCHD/MPEG2 /JPEG playback)	Y (AVCHD/MPEG2 /JPEG playback)	Y (JPEG playback)
	HDMI Input	4	3	3	3	2
	PC Input	Y	Y	Y	Y	Y
	LAN Port	—	—	—	—	—
	VIERA Cast	—	—	—	—	—
	VIERA Tools	Y	Y	Y	Y	Y
	VIERA Link (HDAVI Control 4)	Y	Y	Y	Y	Y
	Game Mode	Y	Y	Y	Y	Y

2. PCB Location & Function

2. PCB Location & Function

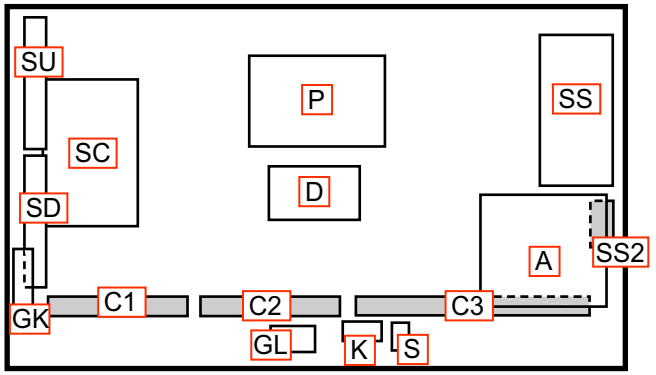
V10/V11 Series

TH-P65V10S / TH-P65V11S



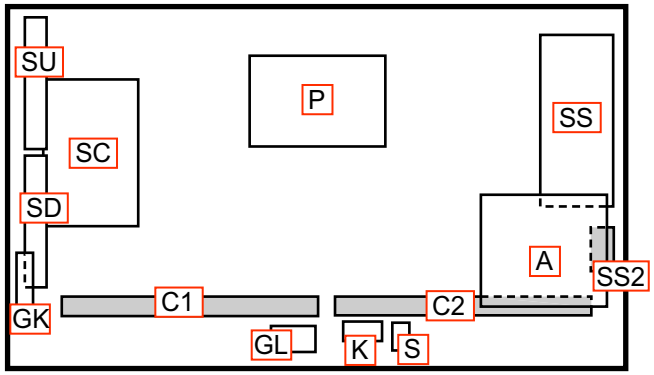
Board Name	Function	Parts Number
P	Power Supply (SUS)	ETX2MM774MG
	Power Supply (MULTI)	ETX2MM774MA
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, PC, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-AVC,	TXN/A1DRUM (for TH-P65V10S) TXN/A1DRUH (for TH-P65V11S)
D	Format Converter, Plasma AI, Sub-Field Processor	TZTNP02DNUM
K	Remote receiver, Power LED, C.A.T.S sensor	TNPA4857AC
S	Power Switch	TNPA4858AB
GK	Key Switch	TNPA4875AB
GL	SD LED	TNPA4693AB
C1	Data Driver (Lower Right)	TNPA4990
C2	Data Driver (Lower Center)	TNPA4991
C3	Data Driver (Lower Left)	TNPA4992
SC	Scan Drive	TXNSC1DNUJ
SS	Sustain Drive	TXNSS1DNUJ
SS2	Sustain out (Upper)	TNPA4983
SS3	Sustain out (Lower)	TNPA4984
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TNPA4981
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TNPA4982

TH-P50V10S / TH-P50V11S



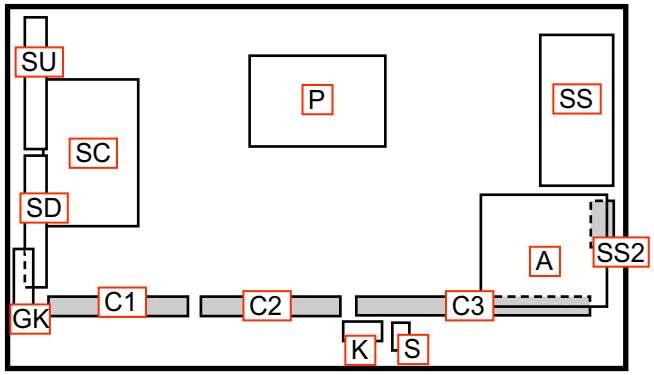
Board Name	Function	Parts Number
P	Power Supply	ETX2MM747MFK
	———	———
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, PC, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-AVC	TXN/A1DRUM (for TH-P50V10S) TXN/A1DRUH (for TH-P50V11S)
D	Format Converter, Plasma AI, Sub-Field Processor	TZTNP02DRUM
K	Remote receiver, Power LED, C.A.T.S sensor	TNPA4857AC
S	Power Switch	TNPA4858AB
GK	Key Switch	TXNGK1DRUM
GL	SD LED	TNPA4693AB
C1	Data Driver (Lower Right)	TNPA4767
C2	Data Driver (Lower Center)	TNPA4768
C3	Data Driver (Lower Left)	TNPA4769
SC	Scan Drive	TNPA4782AF
SS	Sustain Drive	TNPA4783AF
SS2	Sustain out (Lower)	TNPA4804
—	———	———
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TNPA4788
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TNPA4789

TH-P42G10K / TH-P42G11S



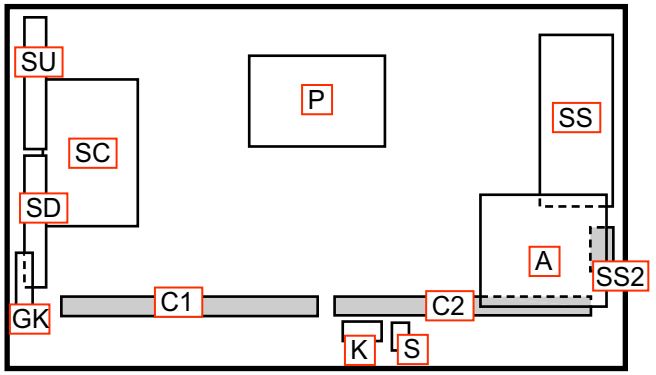
Board Name	Function	Parts Number
P	Power Supply	ETX2MM747MFF
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, PC, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-AVC, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01HMUM (for TH-P42G10K) TZTNP01EBUH (for TH-P42G11S)
K	Remote receiver, Power LED, C.A.T.S sensor	TXN/K1EQUM
GL	SD LED	TXNGL1HMUM
S	Power Switch	TXN/S1EQUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11HMUM
C2	Data Driver (Lower Left)	TXNC21HMUM
SC	Scan Drive	TXNSC1HMUM
SS	Sustain Drive	TXNSS1HMUM
SS2	Sustain out (Lower)	TXNSS21HMUM
SU	Scan out (Upper), Not repairable. SU-Board should be exchanged for service.	TXNSU1HMUM
SD	Scan out (Lower), Not repairable. SD-Board should be exchanged for service.	TXNSD1HMUM

TH-P50S10K / TH-P50S10S



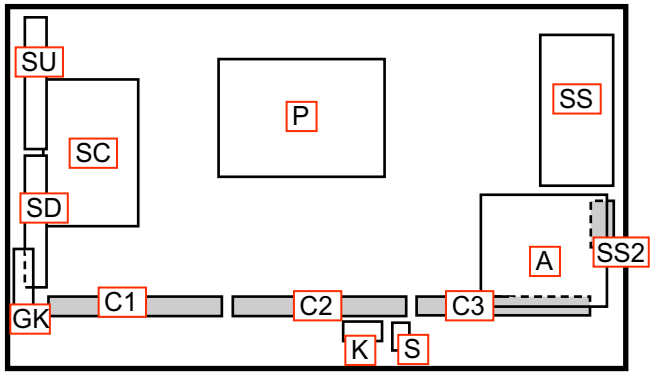
Board Name	Function	Parts Number
P	Power Supply	ETX2MM747MFG
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, PC, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-AVC, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01HVUM
K	Remote receiver, Power LED, C.A.T.S sensor	TXN/K1EQUM
S	Power Switch	TXN/S1EQUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11HVUM
C2	Data Driver (Lower Center)	TXNC21HVUM
C3	Data Driver (Lower Left)	TXNC31HVUM
SC	Scan Drive	TXNSC1HVUM
SS	Sustain Drive	TXNSS1HVUM
SS2	Sustain out (Lower)	TXNSS21HVUM
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TXNSU1HVUM
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TXNSD1HVUM

TH-P42S10K / TH-P42S10S



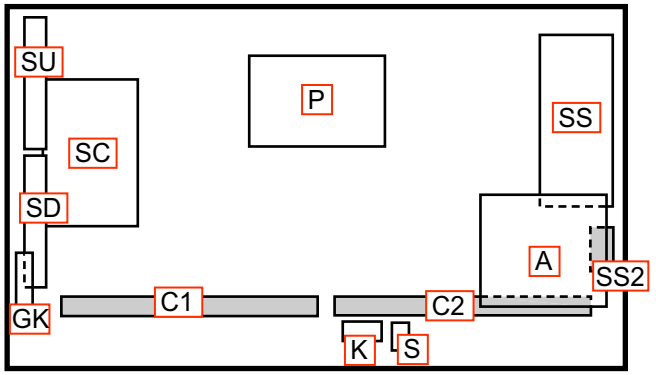
Board Name	Function	Parts Number
P	Power Supply	ETX2MM747MFE
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, PC, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-AVC, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01EFUM
K	Remote receiver, Power LED, C.A.T.S sensor	TXN/K1EQUM
S	Power Switch	TXN/S1EQUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11HMUM
C2	Data Driver (Lower Left)	TXNC21HMUM
—	—	—
SC	Scan Drive	TXNSC1EFUM
SS	Sustain Drive	TXNSS1EFUM
SS2	Sustain out (Lower)	TXNSS21HMUM
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TXNSU1HMUM
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TXNSD1HMUM

TH-P50X10K / TH-P50X10S



Board Name	Function	Parts Number
P	Power Supply	LSEP1279WTHB
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-lite2p, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01EPUM
K	Remote receiver, Power LED, C.A.T.S sensor	TXN/K1EQUM
S	Power Switch	TXN/S1EQUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11EPUM
C2	Data Driver (Lower Center)	TXNC21EPUM
C3	Data Driver (Lower Left)	TXNC31EPUM
SC	Scan Drive	TXNSC1EPUM
SS	Sustain Drive	TXNSS1EPUM
SS2	Sustain out (Lower)	TXNSS21EPUM
SU	Scan out (Upper), Not repairable. SU-Board should be exchanged for service.	TXNSU1EPUM
SD	Scan out (Lower), Not repairable. SD-Board should be exchanged for service.	TXNSD1EPUM

TH-P42X10K / TH-P42X10S

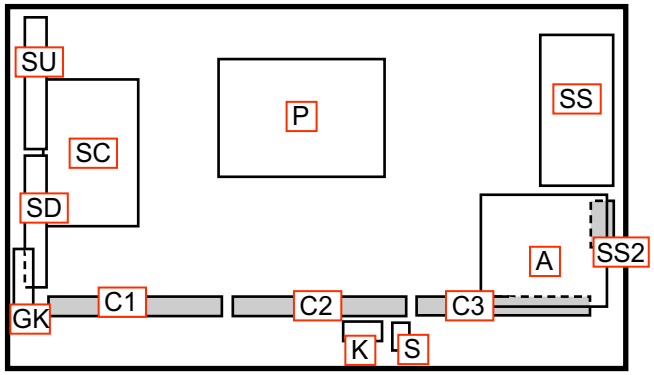


Board Name	Function	Parts Number
P	Power Supply	LSEP1279MTHB
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-lite2p, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01EQUM
K	Remote receiver, Power LED, C.A.T.S sensor	TXN/K1EQUM
S	Power Switch	TXN/S1EQUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11EQUM
C2	Data Driver (Lower Left)	TXNC21EQUM
—	—	—
SC	Scan Drive	TXNSC1EQUM
SS	Sustain Drive	TXNSS1EQUM
SS2	Sustain out (Lower)	TXNSS21EQUM
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TXNSU1EQUM
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TXNSD1EQUM

2. PCB Location & Function

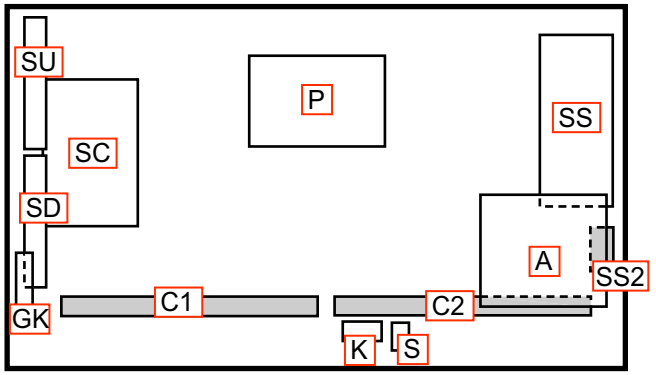
C10 Series

TH-P50C10K / TH-P50C10S



Board Name	Function	Parts Number
P	Power Supply	LSEP1279WTHB
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-lite2p, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01ESUM
K	Remote receiver, Power LED	TXN/K1ETUM
S	Power Switch	TXN/S1ETUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11EPUM
C2	Data Driver (Lower Center)	TXNC21EPUM
C3	Data Driver (Lower Left)	TXNC31EPUM
SC	Scan Drive	TXNSC1EPUM
SS	Sustain Drive	TXNSS1EPUM
SS2	Sustain out (Lower)	TXNSS21EPUM
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TXNSU1EPUM
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TXNSD1EPUM

TH-P42C10K / TH-P42C10S



Board Name	Function	Parts Number
P	Power Supply	LSEP1279MTHB
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-lite2p, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01ETUM
K	Remote receiver, Power LED	TXN/K1ETUM
S	Power Switch	TXN/S1ETUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11EQUM
C2	Data Driver (Lower Left)	TXNC21EQUM
—	—	—
SC	Scan Drive	TXNSC1EQUM
SS	Sustain Drive	TXNSS1EQUM
SS2	Sustain out (Lower)	TXNSS21EQUM
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TXNSU1EQUM
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TXNSD1EQUM

3. PCB List

3. PCB List

	V10/V11 series				G10/G11 series		S10 series		X10 series		C10 series	
Board	TH-P65V10S	TH-P65V11S	TH-P50V10S	TH-P50V11S	TH-P42G10K	TH-P42G11S	TH-P50S10K TH-P50S10S	TH-P42S10K TH-P42S10S	TH-P50X10K TH-P50X10S	TH-P42X10K TH-P42X10S	TH-P50C10K TH-P50C10S	TH-P42C10K TH-P42C10S
P(SUS)	ETX2MM774MG	ETX2MM774MG	ETX2MM747MFK	ETX2MM747MFK	ETX2MM747MFF	ETX2MM747MFF	ETX2MM747MFG	ETX2MM747MFE	LSEP1279WTHB	LSEP1279MTHB	LSEP1279WTHB	LSEP1279MTHB
P(MULTI)	ETX2MM774MA	ETX2MM774MA	----	----	----	----	----	----	----	----	----	----
A	TXN/A1DRUM	TXN/A1DRUH	TXN/A1DRUM	TXN/A1DRUH	TZTNP01HMUM	TZTNP01EBUH	TZTNP01HVUM	TZTNP01EFUM	TZTNP01EPUM	TZTNP01EQUM	TZTNP01ESUM	TZTNP01ETUM
D	TZTNP02DNUM	TZTNP02DNUM	TZTNP02DRUM	TZTNP02DRUM	----	----	----	----	----	----	----	----
K	TNPA4857AC	TNPA4857AC	TNPA4857AC	TNPA4857AC	TXN/K1EQUM	TXN/K1EQUM	TXN/K1EQUM	TXN/K1EQUM	TXN/K1EQUM	TXN/K1EQUM	TXN/K1ETUM	TXN/K1ETUM
S	TNPA4858AB	TNPA4858AB	TNPA4858AB	TNPA4858AB	TXN/S1EQUM	TXN/S1EQUM	TXN/S1EQUM	TXN/S1EQUM	TXN/S1EQUM	TXN/S1EQUM	TXN/S1ETUM	TXN/S1ETUM
GK	TNPA4875AB	TNPA4875AB	TXNGK1DRUM	TXNGK1DRUM	TXNGK1EQUM	TXNGK1EQUM	TXNGK1EQUM	TXNGK1EQUM	TXNGK1EQUM	TXNGK1EQUM	TXNGK1EQUM	TXNGK1EQUM
GL	TNPA4693AB	TNPA4693AB	TNPA4693AB	TNPA4693AB	TXNGL1HMUM	TXNGL1HMUM	----	----	----	----	----	----
C1	TNPA4990	TNPA4990	TNPA4767	TNPA4767	TXNC11HMUM	TXNC11HMUM	TXNC11HVUM	TXNC11HMUM	TXNC11EPUM	TXNC11EQUM	TXNC11EPUM	TXNC11EQUM
C2	TNPA4991	TNPA4991	TNPA4768	TNPA4768	TXNC21HMUM	TXNC21HMUM	TXNC21HVUM	TXNC21HMUM	TXNC21EPUM	TXNC21EQUM	TXNC21EPUM	TXNC21EQUM
C3	TNPA4992	TNPA4992	TNPA4769	TNPA4769	----	----	TXNC31HVUM	----	TXNC31EPUM	----	TXNC31EPUM	----
SC	TXNSC1DNUJ	TXNSC1DNUJ	TNPA4782AF	TNPA4782AF	TXNSC1HMUM	TXNSC1HMUM	TXNSC1HVUM	TXNSC1EFUM	TXNSC1EPUM	TXNSC1EQUM	TXNSC1EPUM	TXNSC1EQUM
SS	TXNSS1DNUJ	TXNSS1DNUJ	TNPA4783AF	TNPA4783AF	TXNSS1HMUM	TXNSS1HMUM	TXNSS1HVUM	TXNSS1EFUM	TXNSS1EPUM	TXNSS1EQUM	TXNSS1EPUM	TXNSS1EQUM
SS2	TNPA4983	TNPA4983	TNPA4804	TNPA4804	TXNSS21HMUM	TXNSS21HMUM	TXNSS21HVUM	TXNSS21HMUM	TXNSS21EPUM	TXNSS21EQUM	TXNSS21EPUM	TXNSS21EQUM
SS3	TNPA4984	TNPA4984	----	----	----	----	----	----	----	----	----	----
SU	TNPA4981	TNPA4981	TNPA4788	TNPA4788	TXNSU1HMUM	TXNSU1HMUM	TXNSU1HVUM	TXNSU1HMUM	TXNSU1EPUM	TXNSU1EQUM	TXNSU1EPUM	TXNSU1EQUM
SD	TNPA4982	TNPA4982	TNPA4789	TNPA4789	TXNSD1HMUM	TXNSD1HMUM	TXNSD1HVUM	TXNSD1HMUM	TXNSD1EPUM	TXNSD1EQUM	TXNSD1EPUM	TXNSD1EQUM

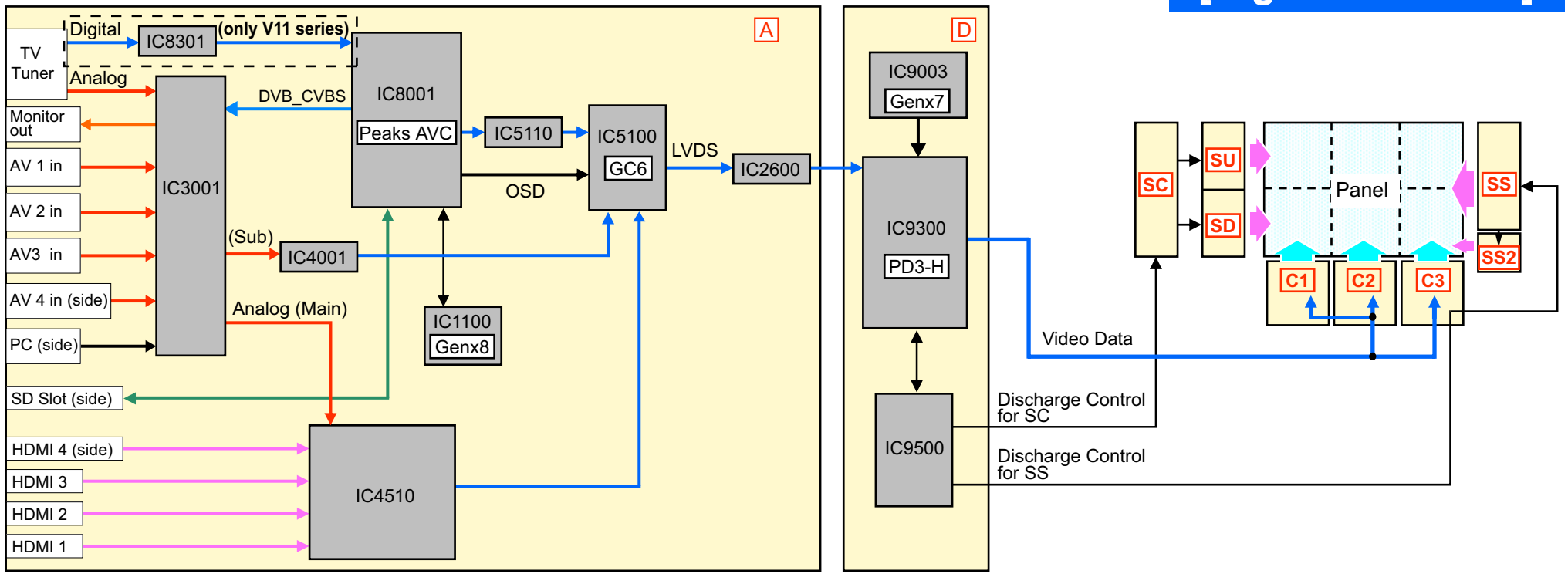
4. Block Diagram

4.Block Diagram

Signal Processing Circuit (1) V10/V11 Series

<PCB Function>

[e.g. TH-P50V11S]



IC8301
: Front End Processor (only V11 series)
IC3001
: AV Switch
IC4001
: GC3FS next

IC4510
: HDMI I/F, 10bit A/D
IC8001
: Peaks AVC (MAIN MPU+VIDEO PROCESSOR)
IC5110
: LVDS RX
IC5100
: GC6
(Video Processor IC (Format Converter) LVDS Transmitter)
IC2600
: FRC-Q
IC1100
: Genx8 (SYSTEM MPU)

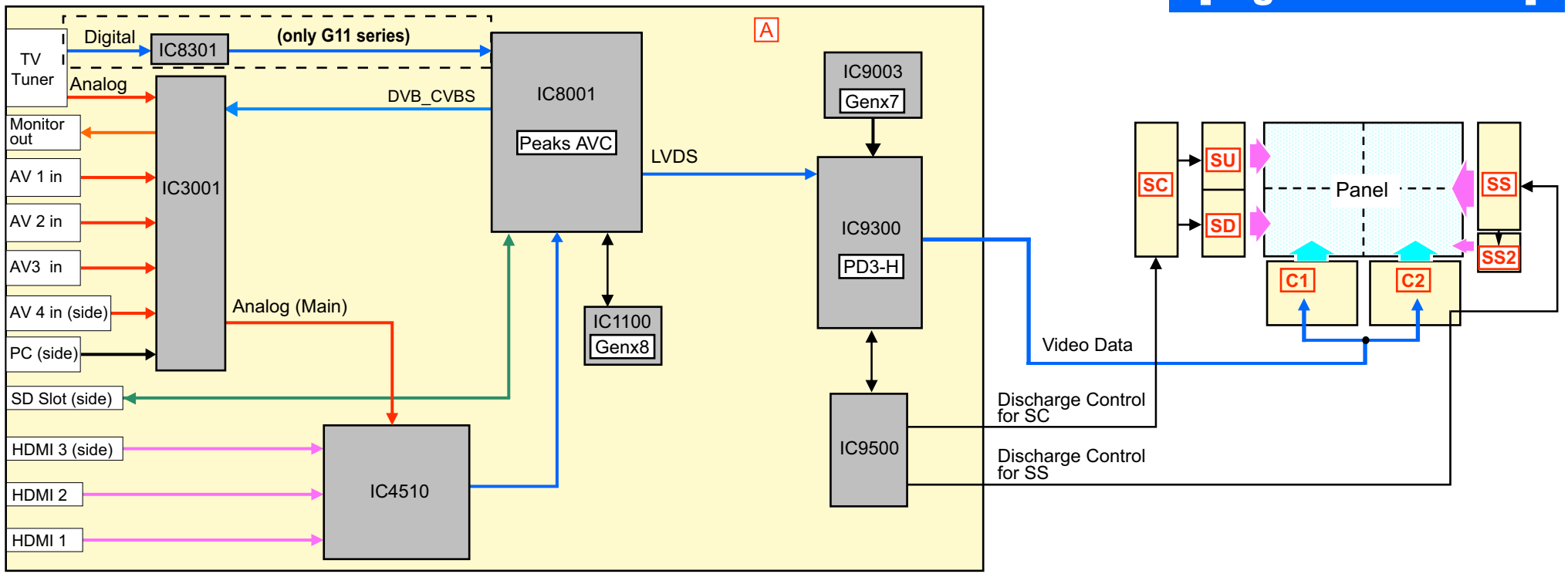
IC9300
: PD3-H
(LVDS Receiver, Sub Field Processor, Data Driver Processor Plasma AI)
IC9500
: FPGA (Discharge Control)
IC9003
: Genx7 (Panel Micom)

4.Block Diagram

Signal Processing Circuit (2) G10/G11 Series

[e.g. TH-P42G11S]

<PCB Function>



IC8301
: Front End Processor (only G11 series)
IC3001
: AV Switch

IC4510
: HDMI I/F, 10bit A/D
IC8001
: Peaks AVC (MAIN MPU+VIDEO PROCESSOR)

IC1100
: Genx8 (SYSTEM MPU)

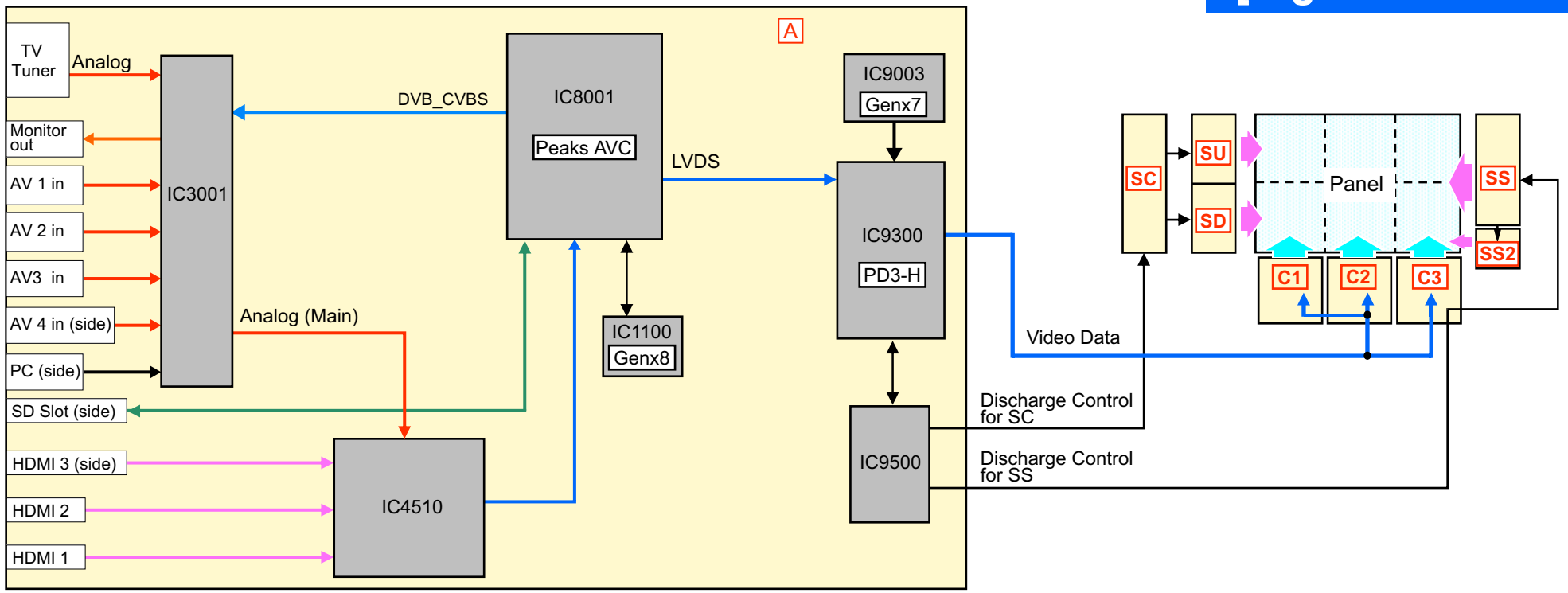
IC9300
: PD3-H
(LVDS Receiver, Sub Field Processor, Data Driver Processor Plasma AI)
IC9500
: FPGA (Discharge Control)
IC9003
: Genx7 (Panel Micom)

4.Block Diagram

Signal Processing Circuit (3) S10 Series

<PCB Function>

[e.g. TH-P50S10K]



IC3001
: AV Switch

IC4510
: HDMI I/F, 10bit A/D

IC8001
: Peaks AVC (MAIN MPU+VIDEO PROCESSOR)

IC1100
: Genx8 (SYSTEM MPU)

IC9300
: PD3-H
(LVDS Receiver, Sub Field Processor, Data Driver Processor Plasma AI)

IC9500
: FPGA (Discharge Control)

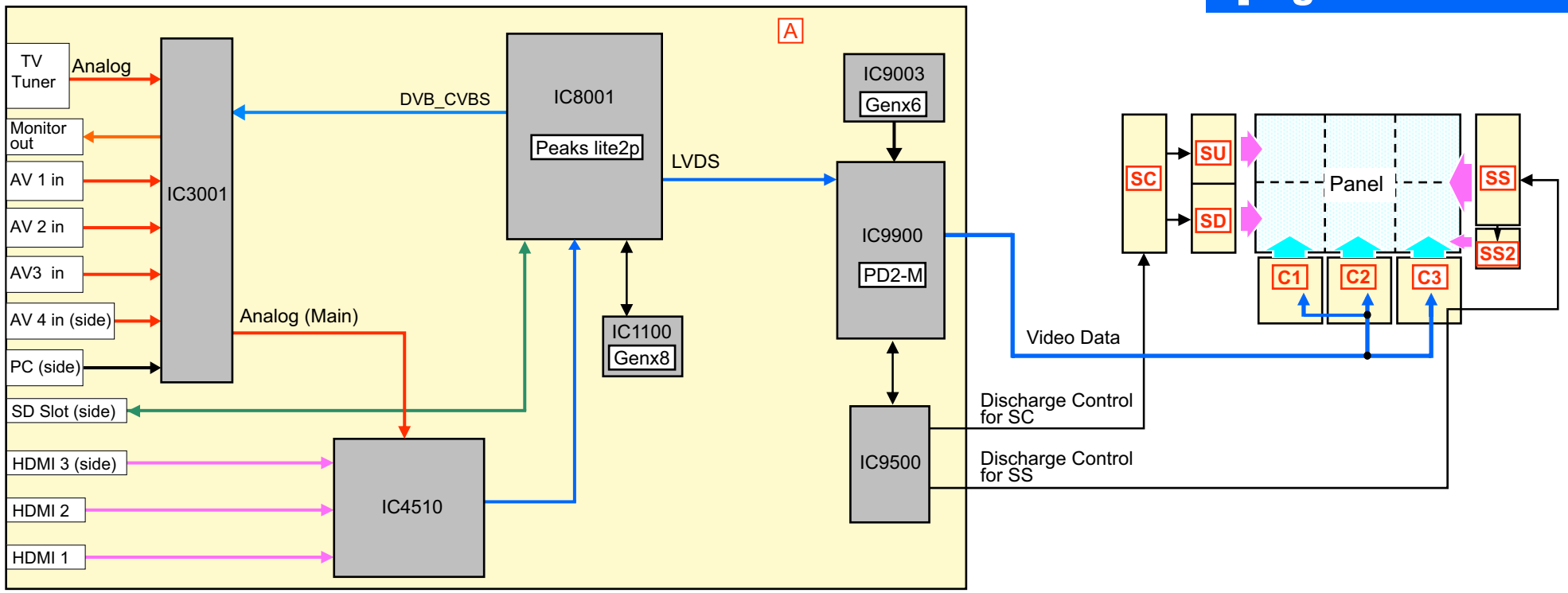
IC9003
: Genx7 (Panel Micom)

4.Block Diagram

Signal Processing Circuit (4) X10 Series

<PCB Function>

[e.g. TH-P50X10K]



IC3001
: AV Switch

IC4510
: HDMI I/F, 10bit A/D
IC8001
: Peaks lite2p
(MAIN MPU+VIDEO PROCESSOR)
IC1100
: Genx8 (SYSTEM MPU)

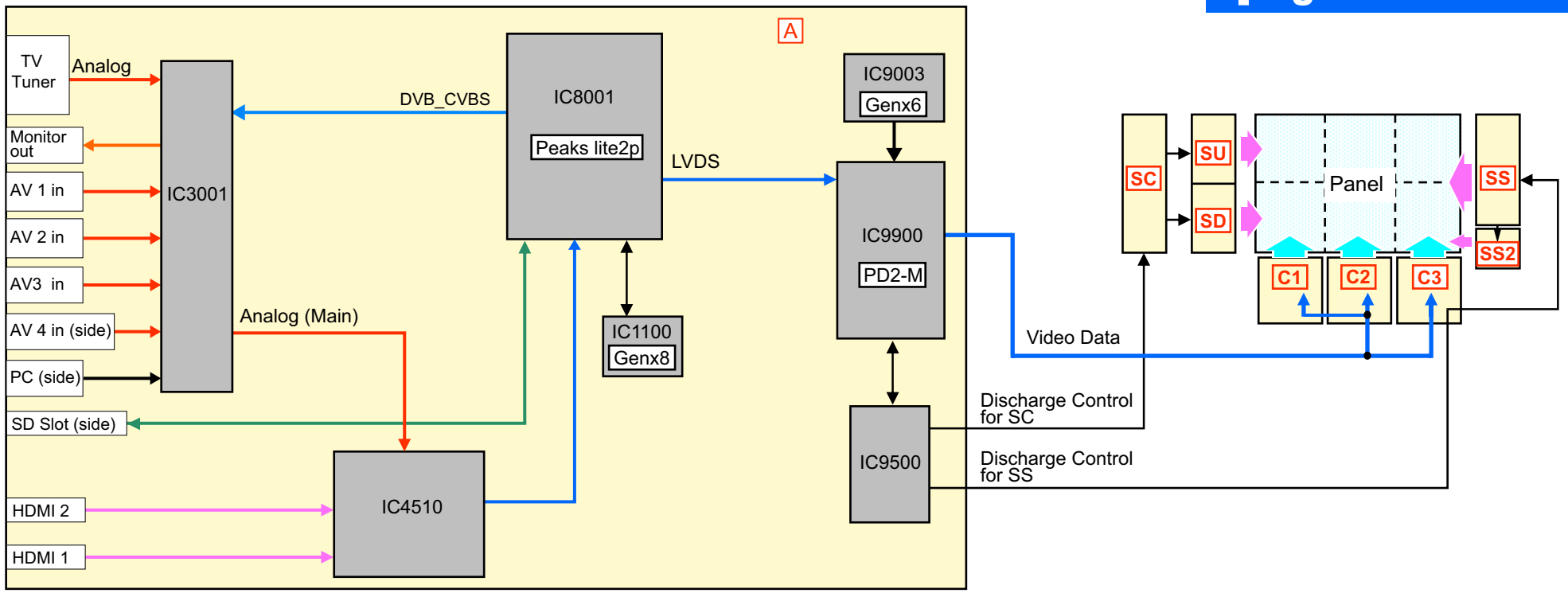
IC9900
: PD2-M
LVDS Receiver,
Sub Field Processor,
Data Driver Processor
Plasma AI
IC9500
: FPGA (Discharge Control)
IC9003
: Genx6 (Panel Micom)

4.Block Diagram

Signal Processing Circuit (5) C10 Series

<PCB Function>

[e.g. TH-P50C10K]



IC3001
: AV Switch

IC4510
: HDMI I/F, 10bit A/D

IC8001
: Peaks lite2p
(MAIN MPU+VIDEO PROCESSOR)

IC1100
: Genx8 (SYSTEM MPU)

IC9900
: PD2-M
(LVDS Receiver,
Sub Field Processor,
Data Driver Processor
Plasma AI)

IC9500
: FPGA (Discharge Control)

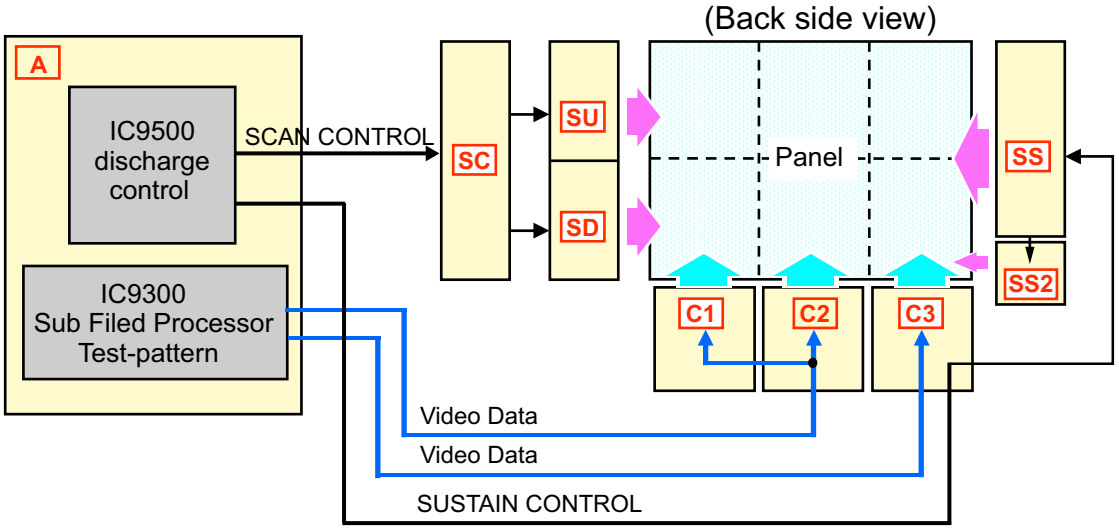
IC9003
: Genx6 (Panel Micom)

5. Troubleshooting

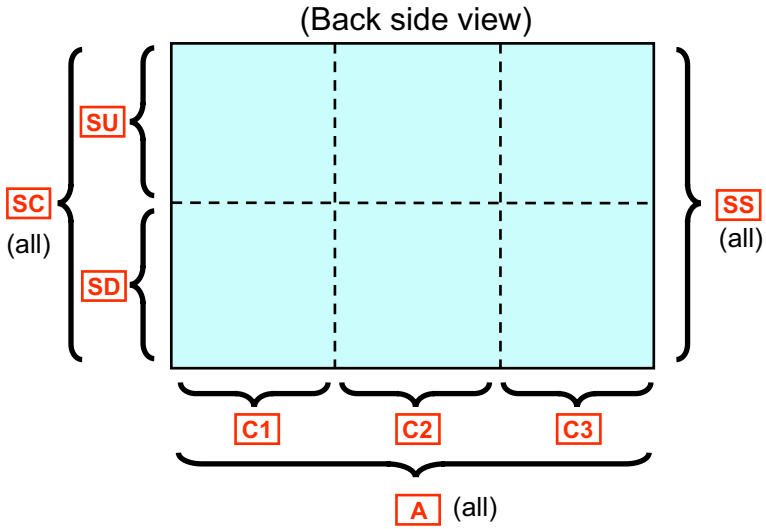
Relation of board and display area

We know the possible defective board by picture trouble area.

<Display device block diagram>



<Relation of defective board and picture trouble area >



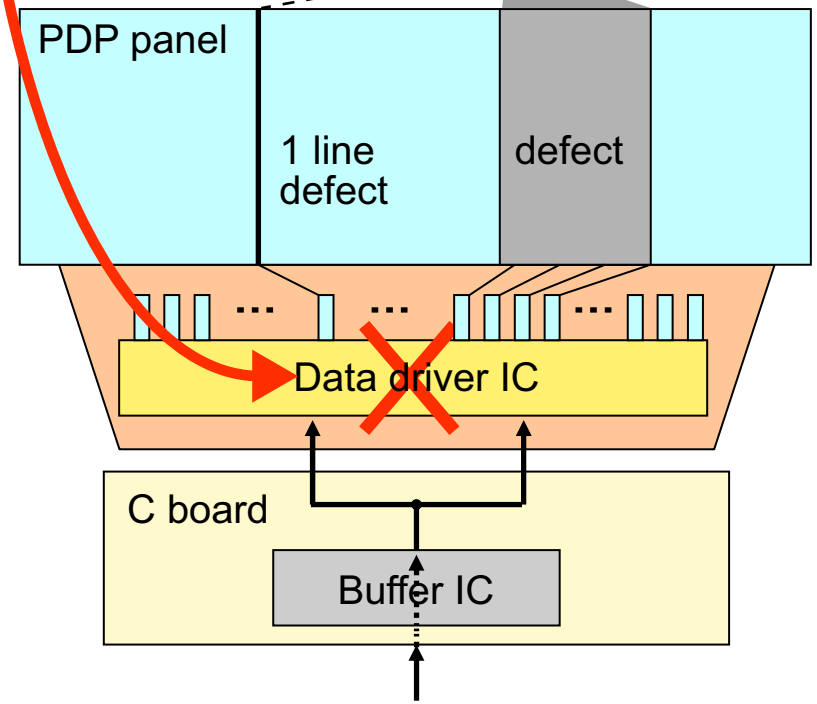
* In case of V10/V11 series, A board change to D board.

Picture trouble (diagnosis of vertical line)

PDP panel defective (Data driver IC defective)

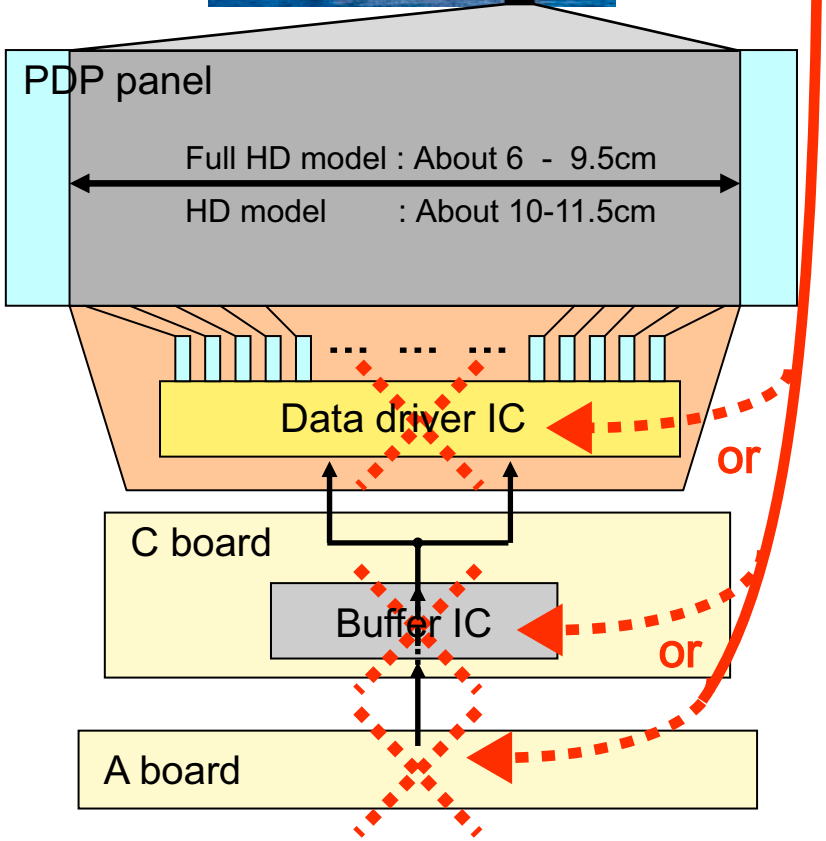
Width is narrower than FPC

Data driver IC defect= PDP panel defect



Data driver IC or C or A board defective

Width is same as FPC

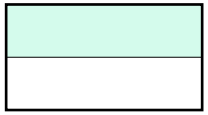
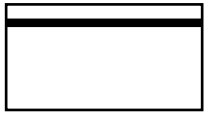
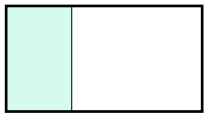
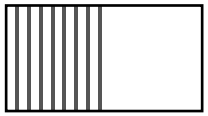


* In case of V10/V11 series, A board change to D board.

5.Troubleshooting for picture trouble

Summary of picture trouble

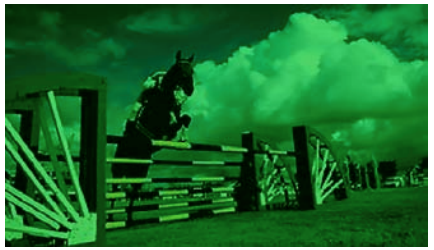
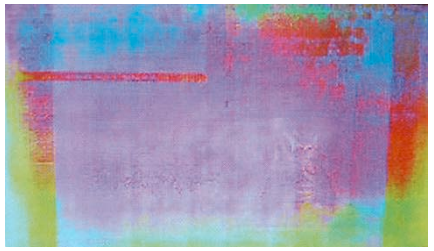
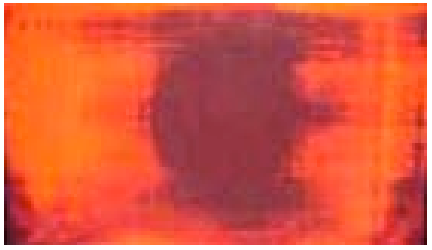
< Some part of screen >

Symptom	Actual symptom	Defective board
Trouble at Upper or Lower half 		SU / SD board
Horizontal line (Upper or Lower side) 		SU / SD board or PDP panel
Trouble at Left or Center or Right part (42 inch : Left or Right half) 		C1-C3 board (42 inch : C1,C2)
Vertical line (Width is same as FPC)		C or A board or PDP panel * In case of V10/V11 series , A board change to D board.
Vertical line (Width is narrower than FPC)		PDP panel
Regular bar (*1) 		A board * In case of V10/V11 series , defective board is A board or D board.

(*1) In case of V10/V11 series, we can judge A-board or D-board is failure by using Test Pattern.
Please refer to Page 24, 25.

Summary of picture trouble

< All area of screen >

Symptom	Actual symptom	Defective board
Irregular Color (*1)		A board * In case of V10/V11 series , defective board is A board or D board.
All vertical line (*1)		A board * In case of V10/V11 series , defective board is A board or D board.
Abnormal electric discharge	 	SC / SS board

(*1) In case of V10/V11 series, we can judge A-board or D-board is failure by using Test Pattern.
Please refer to Page 24, 25.

Diagnosis by Test Pattern (1/2)

<Purpose>

Test pattern is helpful to find the defective parts.
For example, if we can see the picture problem at all over the screen (Picture Noise, Full Vertical Line, Abnormal color), we can find signal processing problem or panel phosphor problem by using test pattern.

<Model>

PDP 2009 Models
(V10,V11,G10,G11,S10,X10,C10 series)

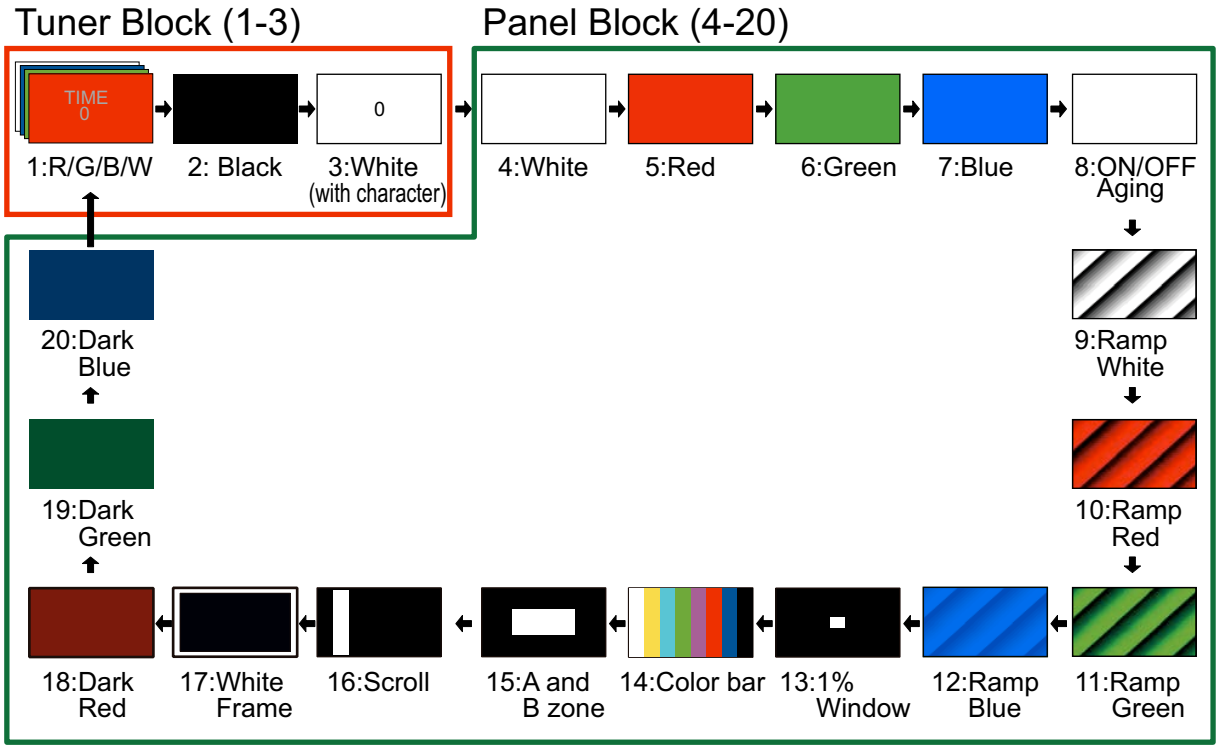
<Symptom>

Picture Noise, Full Vertical Line,
Abnormal color

<How to enter the Test Pattern>

1. While pressing “VOLUME (-)” button of the main unit, press “ 0 ” button of the remote control three times within 2 seconds.
2. Push button “ 1 ” of Remote Controller several times,and select “ Aging ” setting, then “ Test pattern ” will appear.
3. Push “ 3 ” button of Remote Controller to select the test pattern mode to forward.
4. Push “ 4 ” button of Remote Controller to select the test pattern mode to reverse.

<Test Pattern (Normal)>



Diagnosis by Test Pattern (2/2)

<Diagnosis>

How to diagnose by using test pattern.

Abnormal picture
(Picture Noise, Full Vertical Line, Abnormal color)

(1) In case of V10/V11 series

Test pattern (4-20)	Defective Block [Board]
Abnormal	Panel Block [D (SC/SS) Board]
Normal	Tuner Block [A Board]

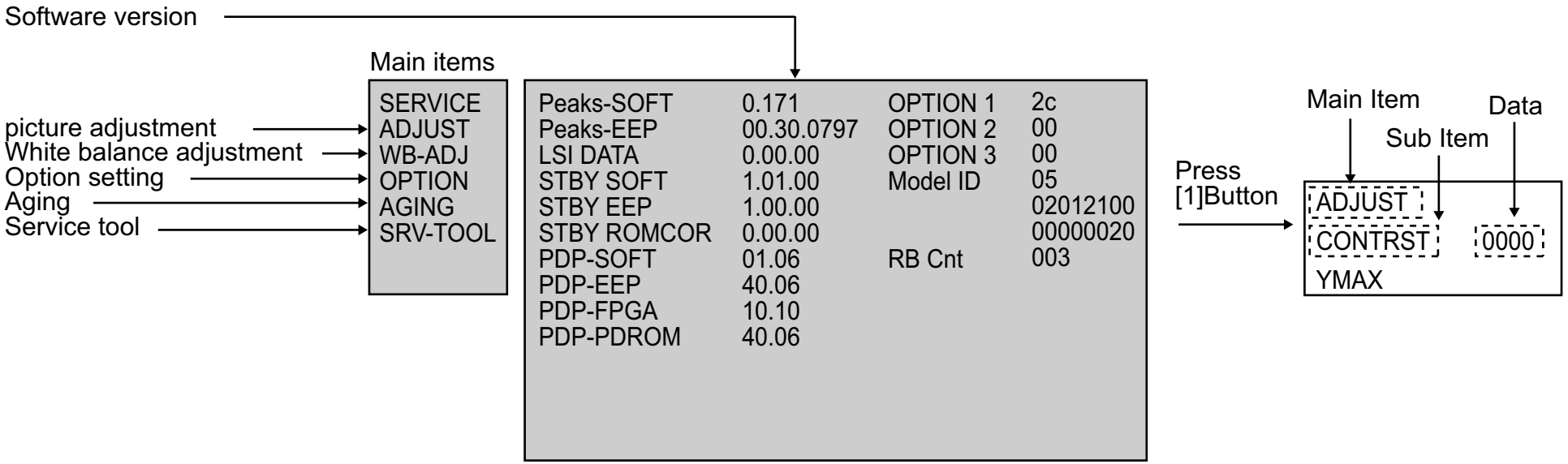
(2) In case of G10/G11/S10/X10/C10 series

Test pattern (4-20)	Defective Block [Board]
Abnormal	Panel Block [A (SC/SS) Board]
Normal	Tuner Block [A Board]

6. Service Information

<How to enter into Service Mode>

While pressing [VOLUME (-)] button of the main unit, press [RECALL] button of the remote control three times within 2 seconds.



Key command

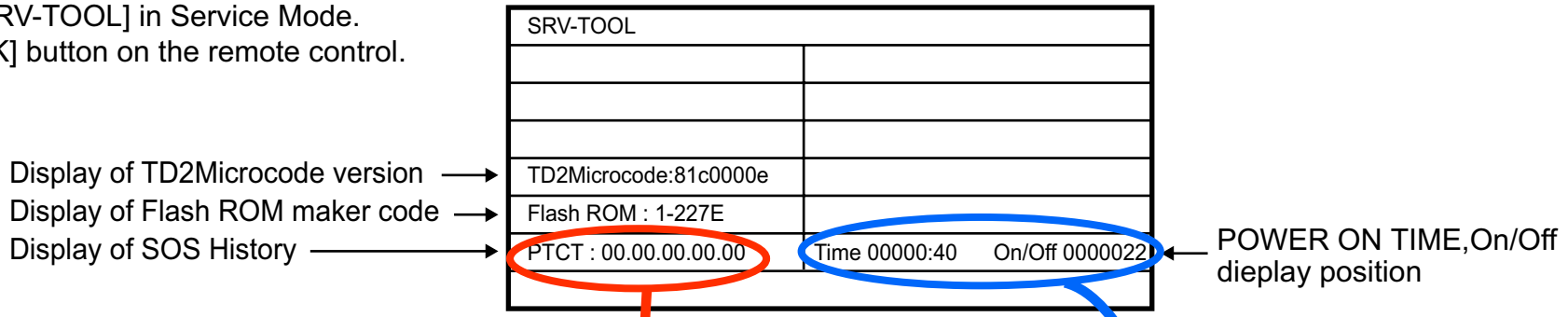
[1] button...Main items Selection in forward direction
[2] button...Main items Selection in reverse direction
[3] button...Sub items Selection in forward direction
[4] button...Sub items Selection in reverse direction
[VOL] button...Value of sub items change in forward direction (+), in reverse direction (-)

Press [OK] to memorize the value.

<Service tool mode>

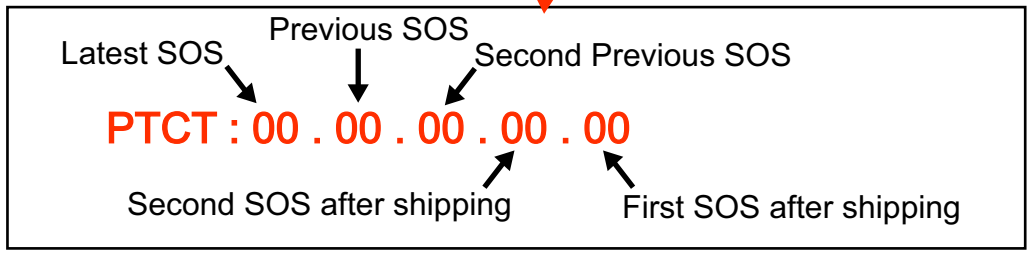
How to access

1. Select [SRV-TOOL] in Service Mode.
2. Press [OK] button on the remote control.



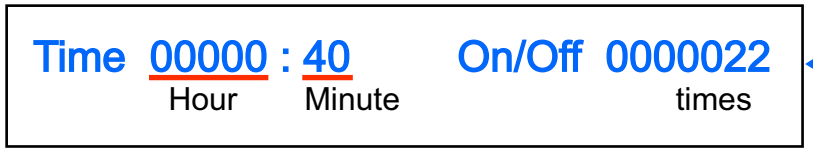
Display of SOS History

SOS History (Number of LED blinking) indication.



POWER ON TIME,On/Off

Move the corsol to right low position and press [MUTE] button for 3sec.



Note : This indication will not be cleared by either of the self-check or any command.

Exit

1. Disconnect the AC cord from wall outlet or switch off the power with the [POWER] button on the main unit.

(2) Local maintenance (1/4)

<Contents>

As a convenient function for failure diagnosis, local maintenance function is installed to memorize log of error messages of digital broadcasting system.
By using this function analysis of troubles can be done.

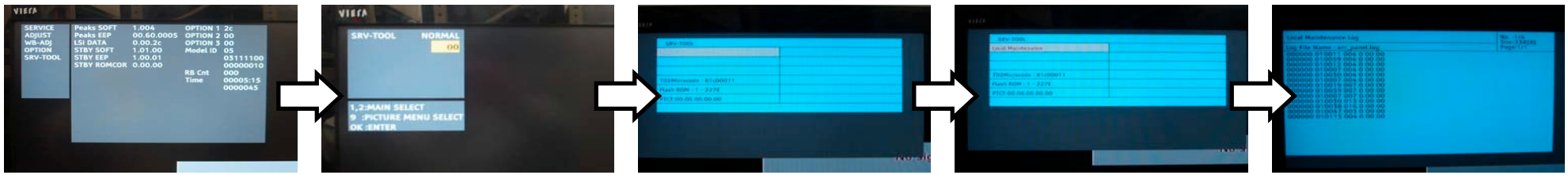
<Available models>

2009 PDP models (only digital model)

<How to enter Local Maintenance display>

(1) Access SRV-TOOL display
Enter service mode, select SRV-TOOL, and push “OK” key by the remote control.

(2) Enter Log display of Local Maintenance.
By using four directions (UP, DOWN,RIGHT,LEFT), select upper-left cell of SRV-TOOL and push “OK” key for about three seconds.
The characters of Local Maintenance are indicated.
And perss “OK” key again.
Log display of Local Maintenance starts.



Service mode Top display | SRV-TOOL display | Before of Local Maintenance display | After of Local Maintenance display | Log display

- Escape from Local maintenance display -------- Switch off the [POWER] button.
- How to delete Log data ------- Set factory shipping conditions by self check. (refer to page 37)

<Log construction of Local Maintenance>

The explanation of log

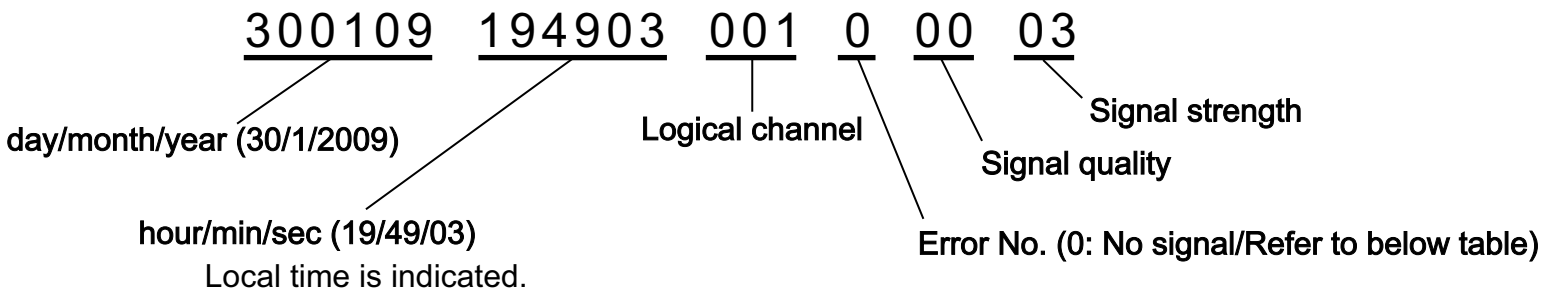
[2009 PAL digital models]

1. cec.log - - - For the design section to analyze
2. err_panel.log - - - log of error message of digital broadcasting,time, kind and date reception level
(refer to page 31)
3. pow_msg.log - - - For the design section to analyze
4. record1.log - - - For the design section to analyze
5. sig_msg.log - - - For the design section to analyze

<Log construction of Local Maintenance>

How to read log data

[err_panel.log data]



Kind of Error panel of Error No.

Error No.	Kind of Error panel	Remarks
0	NO SIGNAL	
1	NO SERVICE AVALABLE	
2	NO VIDEO	
3	INVALID DVB CHANNEL	
4	ENCRIPTED	

<Data copy function of Local Maintenance Log to SD card>

Log of Local Maintenance can be copied by Data Copy function to SD card and log data can be confirmed by PC.

<Steps to Data copy to SD card (TV set ➡ SD card)>

1. Making “starting file” in SD card
   According to the function to use, make pwd file to start.
   And keep it to SD card.
   pwd file name - - - localmainte.pwd

   How to make pwd file :
   Create new (blank) Text file and change file name.

2. Power ON TV set and insert SD card with pwd file.
   Automatically, Data Copy function display appears.

   Note) Keep only one kind of pwd file in SD card.
   If there are several pwd files, it may not work.

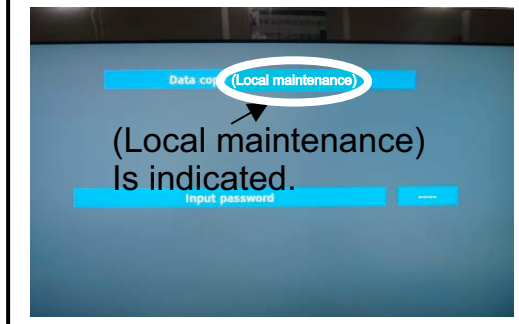
3. Input Pass word and perform Data Copy.
   Input Pass word (0813) for Data copy to SD card and perform Data Copy.

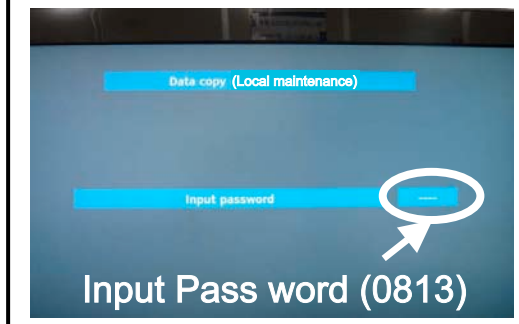
4. Completion of Data Copy
   After data copy completion is indicated, pull out SD card.
   In SD card, new folder is made and in this folder, several logs are copied.

   Note) No function to copy from SD card to TV set.

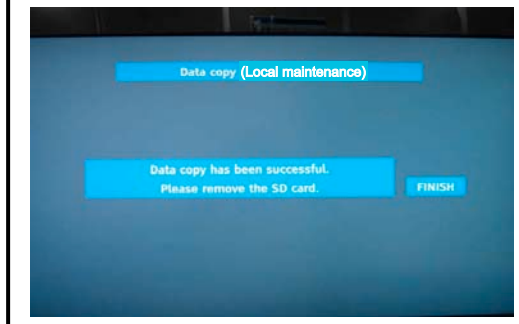
5. Power off the TV.

   Note) By using PC, text data can be read.
   And if data is not text data, change the suffix to txt or read by using the text editor.





Password Input



Completion display

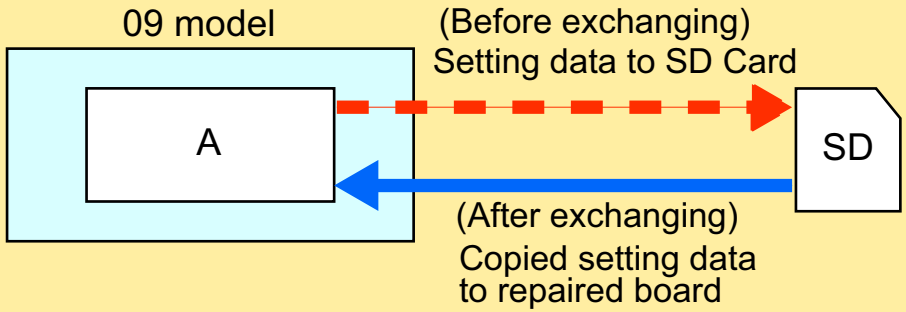
(3) Data Copy by SD Card (1/4)

<From TV set to SD card>

There are two purposes.

(a) Copy of setting data when exchanging repair board (A board)

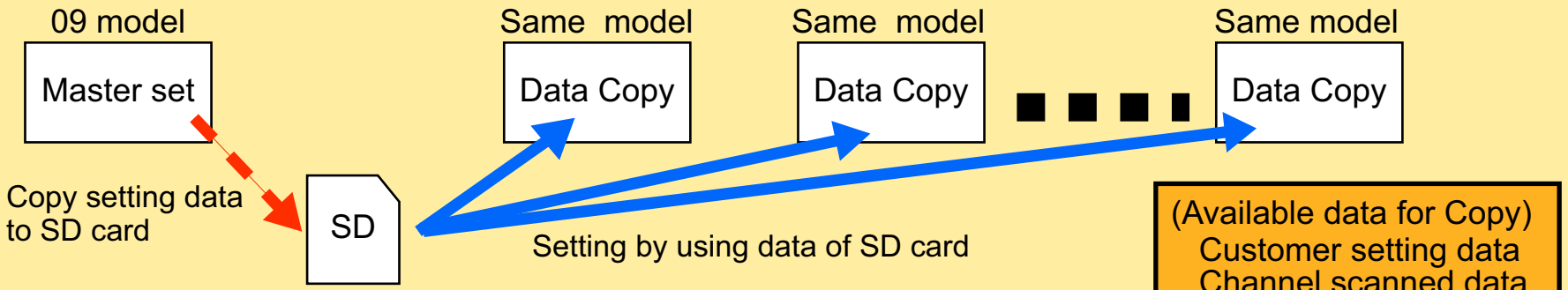
When exchanging repair board customer setting data channel scanned data, and adjustment data before exchanging board data in TV is copied to SD card, and after exchanging repair board copied data in SD card can be copied to TV.



(Available data for Copy)
Customer setting data
Channel scanned data
Adjustment data

(b) Copy of hotel mode setting data

When hotel mode setting customer setting data, and channel scanned data of master set is copied to SD card, and to same models by using SD card data of master set is copied to many same models.



(Available data for Copy)
Customer setting data
Channel scanned data

(3) Data Copy by SD Card (2/4)

<From TV set to SD card>

[Preparation]

Make pwd file of (a) or (b) in SD card.

(Make new (empty) text file and change file name.)

	[pwd File name]
(a) For exchanging repair board	boardreplace.pwd
(b) For hotel mode setting	hotel.pwd

Note : Please make only 1 file ,for preventing operation error.
When making pwd file large letters should not be used.

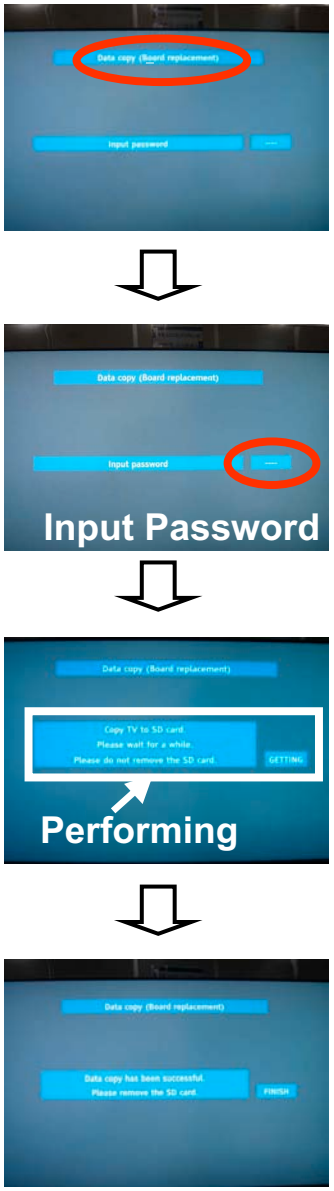
(3) Data Copy by SD Card (3/4)

<Steps of Data Copy to SD card (TV set → SD card)>

1. Power On TV set.
2. Insert SD card with pwd file to SD slot.
3. Automatically, Data Copy display will appear.
4. **Input Pass word** for Data copy to SD card by using remote control.

   [Password for Data Copy]
   (a) For exchanging repair board - - - - 2770
   (b) For hotel mode setting - - - - 4850

5. Perform Data copy to SD card.
   Information for reference
   Time for Data copy (TV → SD card)
   Euro/Asia model - - - - 90 seconds max.
6. End of Data copy to SD card
   After the completion display of
   Data Copy appear, pull out SD card.
   Even if SD card is not pulled out, the display
   will appear automatically.
   Power Off TV set.
7. How to confirm Copy data
   File data can be confirmed by PC.
   When the following folder exists, data is pulled out.
   Folder Name : (a) For exchanging repair boards - - - - user_setup
   (After writing data, data is deleted.)
   (b) For hotel mode setting - - - - hotel
   (After writing data, data is not deleted.)



Data copy
(Board replacement)
or
(Hotel)

Input Pass word
2770
or
4850

Performing

Completion
(e.g. exchanging repair board)

(3) Data Copy by SD Card (4/4)

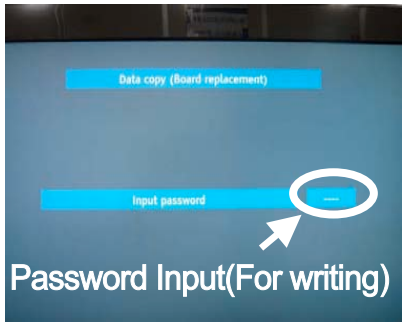
<Steps of Data Copy to TV set>

1. Power On TV set.
2. Insert SD card with Data to SD slot.
3. Automatically, Data Copy display will appear.
4. Input Pass word for Data copy to TV set by using remote control.

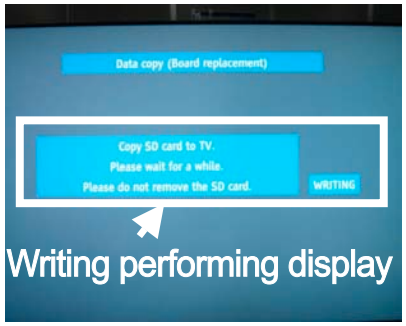
[Password for Data Copy]
(a) For exchanging repair board - - - - 2771
(b) For hotel mode setting - - - - 4851

5. Perform Data copy to TV set.
6. Completion of Data to TV set.
   Completion of data Copy is displayed.
7. Pull out SD card.
   Power OFF/ON by main switch.

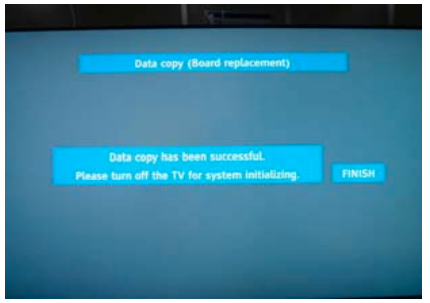
Note: 1. Depending on the trouble of boards, function of Data copy for exchanging repair boards does not always work.
2. This function does not work with other model numbers.



(e.g. For exchanging repair board)



Performing



Completion

<Check of the IIC bus lines>

1. How to access

Self-check indication only :

Produce TV reception screen, and while pressing [VOLUME (-)] button on the main unit, press [OK] button on the remote control for more than 3 seconds.

Self-check indication and forced to factory shipment setting :

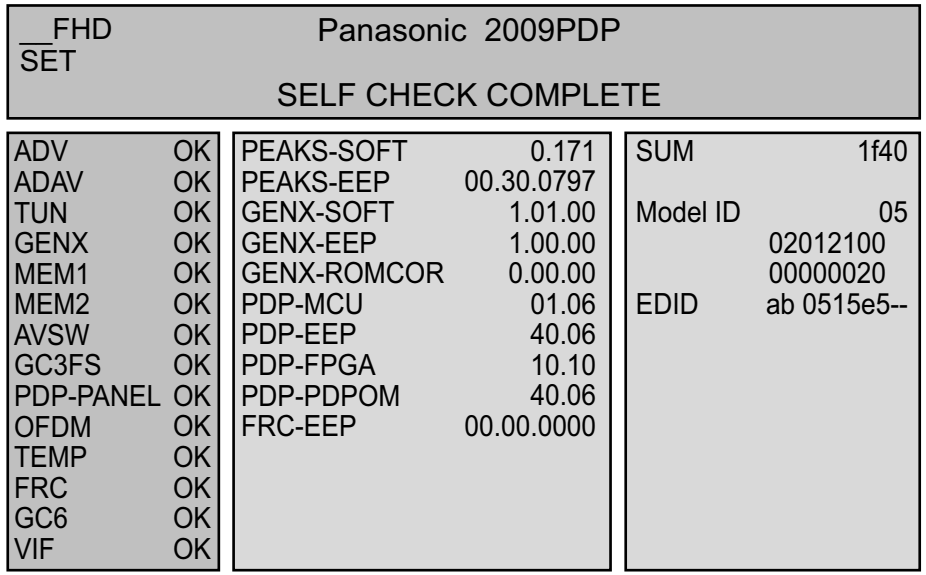
Produce TV reception screen, and while pressing [VOLUME (-)] button on the main unit, press [MENU] button on the remote control for more than 3 seconds.

Exit :

Disconnect the AC cord from wall outlet or switch off the power with the [POWER] button on the main unit.

2.Screen display & Check Point

(1) < V10/V11 Series > Screen display



Check Point

Confirm the following parts if NG was displayed.

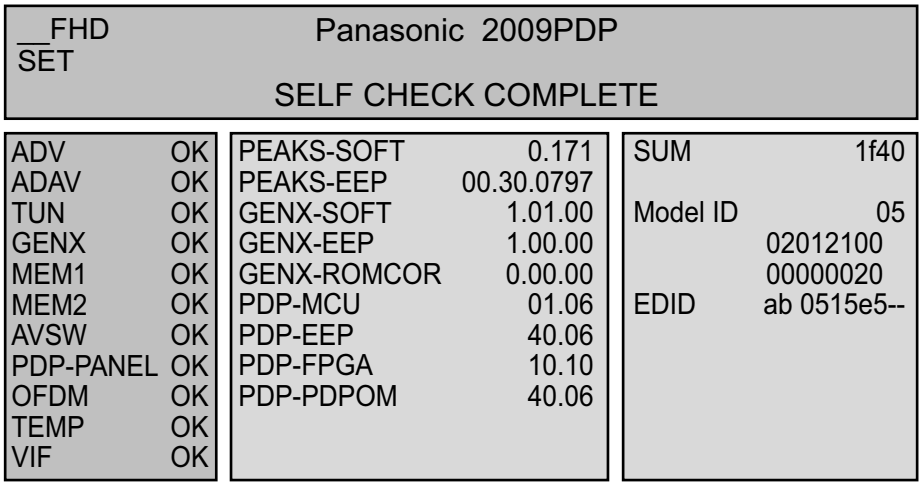
	Display	Ref.No.	Description	P.C.B
	ADV	IC4510	AD/HDMI	A-Board
	ADAV	IC4510	Sound Processor	A-Board
	TUN	TU2901	Tuner	A-Board
	GENX	IC1100	GenX (STB MCU)	A-Board
	MEM1	IC1101	EEPROM (GenX)	A-Board
	MEM2	IC8502	EPPROM (Peaks)	A-Board
	AVSW	IC3001	Audio/Video SW	A-Board
	GC3FS	IC4001	Global core sub	A-Board
	PDP-PANEL	IC9003	MICOM	D-Board
*	OFDM	IC8301	Digital demodulater	A-Board
	TEMP	IC1000	Temp Sensor	A-Board
	RFC	IC2600	Frame rate converter	A-Board
	GC6	IC5100	Global core	A-Board
*	VIF	TU2901	Tuner	A-Board

* only V11 series

<Check of the IIC bus lines>

2.Screen display & Check Point

(2) < G11 Series > Screen display

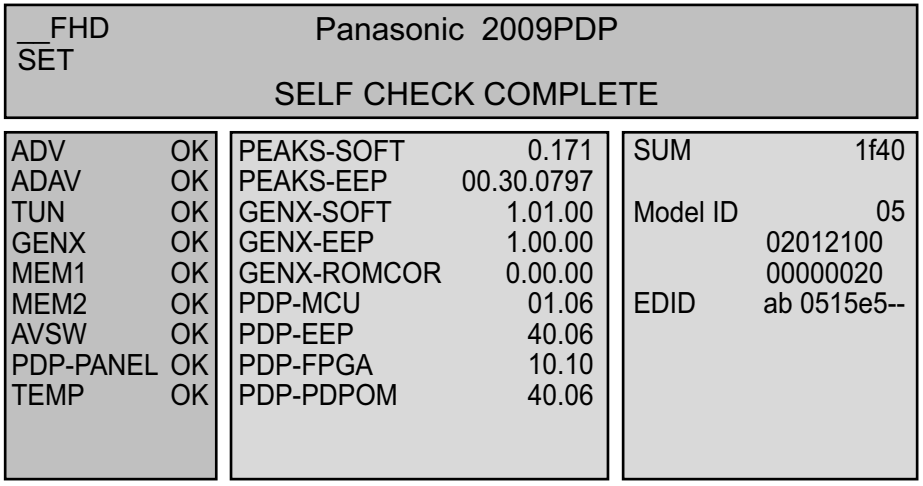


Check Point

Confirm the following parts if NG was displayed.

Display	Ref.No.	Description	P.C.B
ADV	IC4510	AD/HDMI	A-Board
ADAV	IC4510	Sound Processor	A-Board
TUN	TU2901	Tuner	A-Board
GENX	IC1100	GenX (STB MCU)	A-Board
MEM1	IC1101	EEPROM (GenX)	A-Board
MEM2	IC8502	EPPROM (Peaks)	A-Board
AVSW	IC3001	Audio/Video SW	A-Board
PDP-PANEL	IC9003	MICOM	A-Board
OFDM	IC8301	Digital demodulater	A-Board
TEMP	IC1000	Temp Sensor	A-Board
VIF	TU2901	Tuner	A-Board

(3) < G10/S10/C10/X10 Series > Screen display



Check Point

Confirm the following parts if NG was displayed.

Display	Ref.No.	Description	P.C.B
ADV	IC4510	AD/HDMI	A-Board
ADAV	IC4510	Sound Processor	A-Board
TUN	TU2901	Tuner	A-Board
GENX	IC1100	GenX (STB MCU)	A-Board
MEM1	IC1101	EEPROM (GenX)	A-Board
MEM2	IC8502 (G10 series) (S10 series) (X10 series) IC8601 (C10 series)	EPPROM (Peaks)	A-Board
AVSW	IC3001	Audio/Video SW	A-Board
PDP-PANEL	IC9003	MICOM	A-Board
TEMP	IC1000	Temp Sensor	A-Board

(5) Copy of results of Self Check to SD card (1/2)

<Contents>

By using this function, even in the case of blackout, the results of Self Check can be confirmed.

<Available models>

2009 PDP models

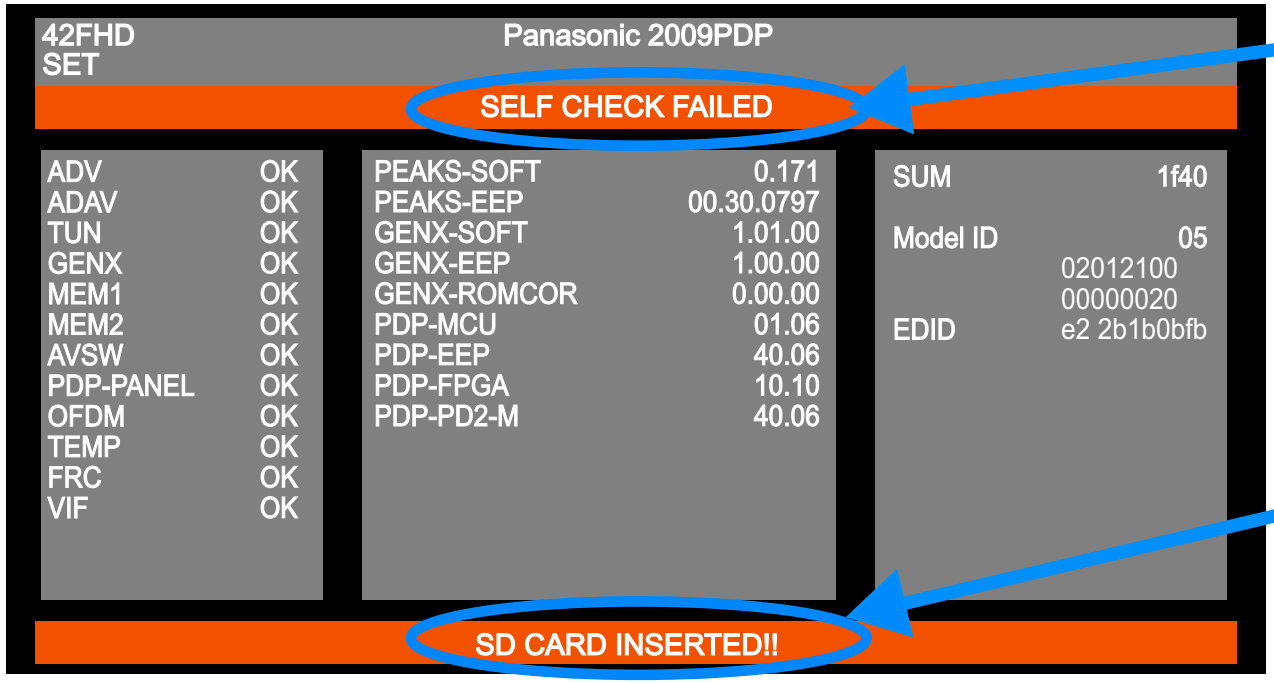
<Steps>

1. Power on of TV set and insert the SD card. (**Starting file is not necessary.**)
2. After inserting SD card,perform Self Check according the method of Service Manual. (refer to page 37)
3. After the completion of Self Check,log file of results is automatically made.

   File name is selfcheck.log.

   If selfcheck.log is already in SD card, results are overwritten.

Note: For PAL models, when self check is performed with inserting SD card and results of Self check are OK, ”SELF CHECK FAILED” is displayed.



When SD card is inserted and self check is OK,”SELF CHECK FAILED” is displayed.

Warning Comment “SD CARD INSERTED!!” is displayed.

(When SD card is inserted.)

<How to read Self check. Log file>

" File contents "

[yy/mm/dd hh:mm:ss] 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

yy: year(Two last digits),
mm: month,
dd: day,
hh: hour,
mm: minute,
ss: second

No.1-19

Self check result
00 or 01 : OK
FF : NG or Not available for Self check

Items of Self check:Refer to the table below

[PAL models]

No.	Self check items	No.	Self check items
1	exec flag (Self check 01)	11	mem2 (EEPROM for Peaks)
2	ZWEI	12	pdppnl (PDP Panel module)
3	GC3FS	13	OFDM
4	adv (ADV7495A)	14	Temperature Sensor
5	vsw (Video SW)	15	FRC
6	adav(ADAV4622)	16	GC6P
7	avsw (AV SW)	17	VIF
8	Tun (Main Tuner)	18	lan
9	genx (Genx)	19	usb
10	mem1 (EEPROM for Genx)	—	—

<For PDP series in 2009>

The following parameter is fundamental data.
Therefore, it will change according to the following factors and please adjust precise value with your environment and equipment .
1. Air-conditioner 2. Personal skill 3. Specification of Tools etc.

Tools for experiment
Company : Hakko Co.,Ltd.
Model no. : Hakko852 / Hakko853

Applicable model	*PDP series in 2009 year ; The following ICs are used as common parts on several boards (PCBs) in models for all of the world. And the following parameter does not change depending on module (PCB). Therefore, please check IC size and circuit No. of replacing IC and use an appropriate parameter as below.

Type of Definition					HD	HD	FHD	FHD	FHD/HD	FHD	FHD/HD	FHD/HD	FHD/HD	FHD	FHD	FHD
Circuit No.					IC9900	IC9901	IC9300	IC9902&3	IC8001	IC8001	IC8002&3	IC8002&3	IC4510	IC5100	IC5001&2	IC2600
IC size					27*27	12*12	35*35	12*8	27*27	31*31	12*10	12*8	19*19	31*31	12*8	23*23
Profile No.					Profile4	Profile3	Profile1	Profile3	Profile4	Profile4	Profile3	Profile3	Profile2	Profile5	Profile3	Profile4
Kind of work	Item 1	Item 2	Item 3	unit												
Various set up	Initial set up	Nozzle Part No.			**A1129B**	**A1126B**	**A1203B**	**A1126B**	**A1129B**	**A1129B**	**A1126B**	**A1126B**	**A1127B**	**A1265B**	**A1126B**	**A1129B**
		Nozzle Size			**31*31**	**15*15**	**35*35**	**15*15**	**31*31**	**31*31**	**15*15**	**15*15**	**19*19**	**32*32**	**15*15**	**31*31**
		Height from nozzle to C.B.A.	Pre-heating	mm	**40**	**30**	**40**	**30**	**40**	**40**	**30**	**30**	**30**	**40**	**30**	**40**
			Main heating	mm	**4**	**3**	**4**	**3**	**4**	**4**	**3**	**3**	**3**	**4**	**3**	**4**
			Cool down	mm	**40**	**3**	**40**	**3**	**40**	**40**	**3**	**3**	**3**	**40**	**3**	**40**
	Rough adjustment	Temperature	Upper side	deg	**420**	**420**	**445**	**420**	**420**	**420**	**420**	**420**	**415**	**440**	**420**	**420**
			Downer side	deg	**235**	**235**	**235**	**235**	**235**	**235**	**235**	**235**	**230**	**235**	**235**	**235**
		Blow level		l/min	**20**	**12**	**22**	**12**	**20**	**20**	**12**	**12**	**12**	**20**	**12**	**20**
		Heat time		s	**240**	**210**	**240**	**210**	**240**	**240**	**210**	**210**	**180**	**240**	**210**	**240**
	Fine adjustment	Temperature	Upper side	deg	**370+5**	**360+5**	**370+5**	**360+5**	**370+5**	**370+5**	**360+5**	**360+5**	**375+5**	**370+5**	**360+5**	**370+5**
			Downer side	deg	**265+5**	**265+5**	**265+5**	**265+5**	**265+5**	**265+5**	**265+5**	**265+5**	**265+5**	**265+5**	**265+5**	**265+5**
Repair work	Time control	Heat time	Pre-heating	s	**180**	**155**	**180**	**155**	**180**	**180**	**155**	**155**	**140**	**180**	**155**	**180**
			Main heating	s	**60**	**55**	**60**	**55**	**60**	**60**	**55**	**55**	**40**	**60**	**55**	**60**
		Cool down time		s	**over 30**	**over 30**	**over 30**	**over 30**	**over 30**	**over 30**	**over 30**	**over 30**	**over 30**	**over 30**	**over 30**	**over 30**
Remark for each IC					**Profile4**	**Profile3**	**Profile1**	**Profile3**	**Profile4**	**Profile4**	**Profile3**	**Profile3**	**Profile2**	**Profile5**	**Profile3**	**Profile4**

Additional Information	1. If there are some parts (Crystal, capacitor, Tuner) near the target IC, cover them with heat-resistant tape.